COMPUTER INFORMATION SYSTEMS MAJOR (B.S.)

https://manchester.unh.edu/academics/degree-programs/computer-information-systems

Description

The computer information systems (CIS) or information technology (IT) field, in its broadest sense, encompasses all aspects of computing technology. During their program of study, students develop a strong skillset to effectively select, administer, apply, and integrate computing technologies to create IT solutions that meet the needs of users within an organizational context.

The bachelor of science degree in Computer Information Systems prepares graduates with knowledge, skills, and professional practices to work in the highly integrated field of computing technologies and to grow into leadership positions. The program also enables graduates to further their studies at the graduate level and pursue research in a computing-related discipline.

Career opportunities for students with an undergraduate CIS degree are varied, but may include such areas as software applications developer, data security specialist, database developer/administrator, e-commerce analyst/programmer, help desk manager, multimedia developer, network/system administrator, technical writer, technology trainer, user support specialist, testing and quality assurance specialist, or web developer. Career options exist in a wide range of organizations as all businesses, industries, and nonprofits continue to use, develop, and integrate information technology solutions.

Program Educational Objectives

Within five years of graduation a CIS student should be able to:

- Apply knowledge and skills in core and advanced information technologies to help an organization achieve its goals.
- Advocate for users of information technologies, whether they are end users of information systems, managers of enterprise applications, developers of IT solutions, or customers of IT-reliant work systems.
- Develop, manage, and evaluate computing and communication systems and services.
- Live and work as contributing, well-rounded members of society.

Program Outcomes

The program enables students to achieve, by time of graduation, the following competencies:

- Apply knowledge of computing and mathematics appropriate to the discipline.
- Analyze a problem, and identify and define the computing requirements appropriate to its solution.
- Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- Function effectively on teams to accomplish a common goal.
- Be cognizant of professional, ethical, legal, security, and social issues and responsibilities.
- Communicate effectively with a range of audiences.
- Apply knowledge and skills in core and advanced information technologies to help an organization achieve its goals.
- Recognize the need for, and an ability to engage in, continuing professional development.
- Use current techniques, skills, and tools necessary for computing practice.
- Use and apply current technical concepts and practices in the core information technologies.
- Identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems.
- Effectively integrate IT-based solutions into the user environment.
- Be cognizant of best practices and standards and their application.
- Assist in the creation of an effective project plan.

The CIS program outcomes are aligned with criteria for accrediting information technology programs as recommended by the ABET Computing Accreditation Commission and the ACM Computing Curricula – IT 2017 Information Technology guidelines.

Requirements

Students majoring in computer information systems must complete 128 credits to graduate, satisfy the University’s Discovery Program, and complete 81 credits in the major with a minimum of C- in each course. Students must maintain an overall cumulative GPA of 2.0 or better.

Transfer students who elect to major in computer information systems must earn 81 approved credits for completion of the their major, of which at least 24 credits must be completed at UNH Manchester.

Program Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>COMP 690</td>
<td>Internship Experience</td>
<td>1</td>
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<tr>
<td>COMP 700</td>
<td>Object-Oriented Software Development</td>
<td>4</td>
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<tr>
<td>UMST 582</td>
<td>Internship and Career Planning Seminar</td>
<td>1</td>
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<tr>
<td>COMP 715</td>
<td>Information Security</td>
<td>4</td>
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<tr>
<td>COMP 730</td>
<td>Information Security</td>
<td>4</td>
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<tr>
<td>COMP 500</td>
<td>Discrete Structures</td>
<td>4</td>
</tr>
<tr>
<td>COMP 520</td>
<td>Database Design and Development</td>
<td>4</td>
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<tr>
<td>COMP 525</td>
<td>Data Structures Fundamentals</td>
<td>4</td>
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<tr>
<td>COMP 550</td>
<td>Networking Concepts</td>
<td>4</td>
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<tr>
<td>COMP 560</td>
<td>Ethics and the Law in the Digital Age</td>
<td>4</td>
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<tr>
<td>COMP 715</td>
<td>Information Security</td>
<td>4</td>
</tr>
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<td>COMP 730</td>
<td>Object-Oriented Software Development</td>
<td>4</td>
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1. Select one of the following:
   - MATH 420 Finite Mathematics
   - MATH 424B Calculus for Life Sciences
   - MATH 425 Calculus I
   - COMP 500 Discrete Structures

University of New Hampshire
Computing Topics
Select three computing courses totalling twelve credits 12

Concentration
Select four courses 16

Total Credits 81

1 Any of these courses, except for COMP 500 Discrete Structures, may be used to satisfy the Quantitative Reasoning Discovery requirement.

2 To broaden and advance student learning of computing innovations. Advisor permission required.

3 Majors can creatively design a concentration of courses that meet their academic and professional goals and career plans. Four courses can be selected across a wide university curriculum, reflecting majors' interests in a liberal arts, scientific, engineering, interdisciplinary, or professional area of study. The concentration must be approved by the student's advisor before the student's junior year.

For additional information about the computer information systems program, contact Michael Jonas (michael.jonas@unh.edu), (603) 641-4352, or contact the UNH Manchester Office of Admissions (unhm.admissions@unh.edu), (603) 641-4150.